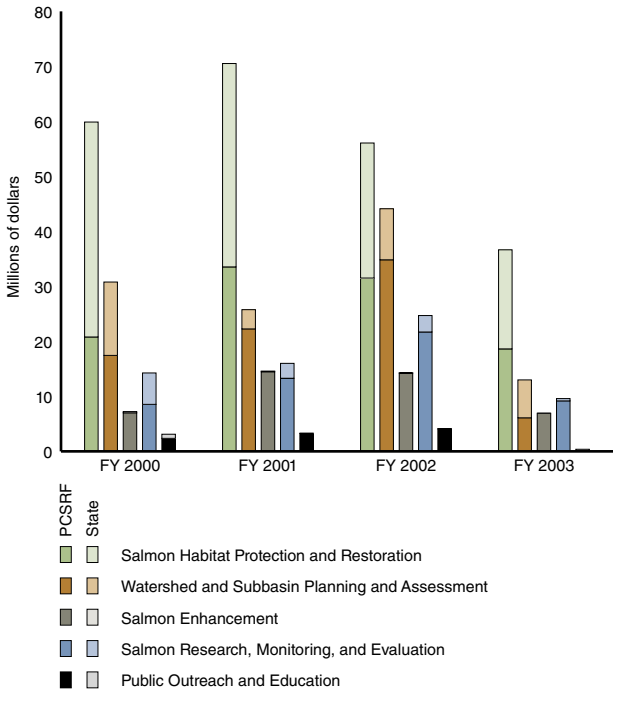
Chapter 3: PCSRF Performance by Objective

States and tribes are beginning to describe the progress they are making toward salmon recovery using the performance indicators under each of the five PCSRF performance objectives: 1) salmon habitat protection and restoration; 2) watershed and sub-basin planning and assessment; 3) salmon enhancement; 4) salmon research, monitoring, and evaluation; and, 5) public education and outreach. Exhibit 3–1 depicts the total expenditures of PCSRF and state matching funds across the various objectives. As described in Chapter 1, this is the first year that common performance indicators for each of these objectives have been used by the states and tribes receiving PCSRF funds. With a performance tracking and reporting system now in place and ongoing RM&E efforts, NMFS is working with the states and tribes to set timelines and targets for annual and long-term performance measures that will measure not only outputs of various funded projects, but also address the collective outcomes of the investments.

Measuring performance through specific objectives is designed to ensure reporting is consistent across the entities receiving funds. Continued development of annual and long-term performance measures will improve accountability in the use of federal and state resources. Performance measures shift the focus of reporting from the amount of money spent on projects to the actual results achieved from federal and state investments in salmon recovery and conservation. States and tribes have begun to provide performance information to NMFS for this report based on data available for 3,213 projects funded in FY 2000–2003. Examples of the reporting are provided in the following sections. The locations of habitat restoration and watershed planning projects are shown in Exhibit 3–2. The reporting of specific performance indicators is a requirement for funds distributed in future fiscal years. PCSRF performance indicators will likely evolve over time, as improvements are gained in understanding the relationship between on-the-ground projects and returns of wild salmon, and in the ability to monitor

Exhibit 3–1: PCSRF and State Funds Distributed by Objective



Note: Only half of the FY 2003 funds was committed as of December 2003.

Exhibit 3–2: Location of PCSRF Habitat Restoration and Watershed Planning Projects Funded Through December 2003

and evaluate progress toward salmon recovery. A complete list of the performance indicators and their definitions is available at http://www.nwr.noaa.gov/pcsrf/.

Salmon Habitat Protection and Restoration

Nearly half of the PCSRF projects funded through 2003 (about 1,500 projects) support activities to protect and restore habitat for Pacific salmon. These projects address the priority factors limiting salmon recovery and restore ecosystem characteristics and processes essential for the survival of salmon. The ten types of habitat projects funded by PCSRF can be categorized as shown in Exhibit 3–3. The majority of the habitat projects restore instream habitat (21 percent), restore riparian habitat (20 percent), or improve fish passage (18 percent).

Exhibit 3–3: Habitat Projects by Type

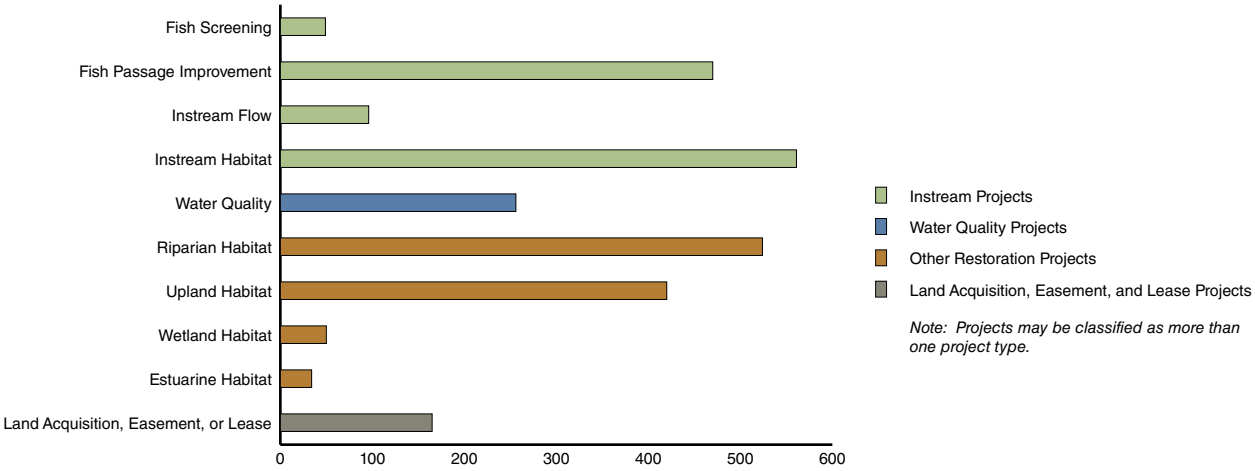
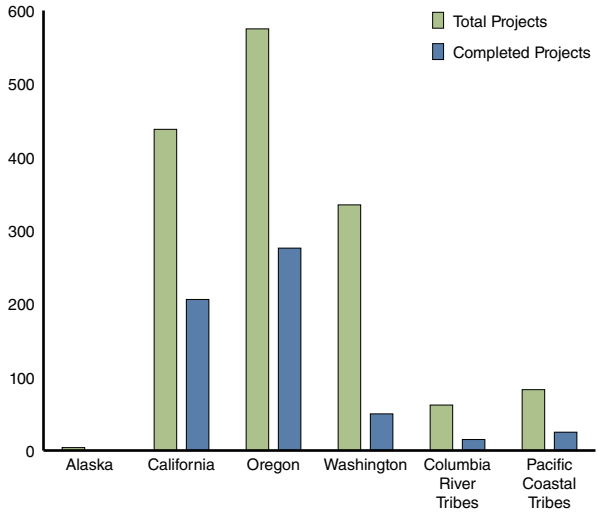


Exhibit 3–4 displays the number of habitat projects and those completed by states/tribes. About 38 percent of the habitat projects overall has been completed.

PCSRF habitat protection and restoration projects have restored miles of salmon habitat both within and along streams across the region. In the northern California coastal region, for example, 49 projects funded in FY 2000–2001 restored almost 10 miles of stream habitat. California and the Round Valley Tribe restored about 19 additional stream miles of habitat in the northern coastal region through

Exhibit 3–4: Salmon Habitat Protection and Restoration Projects by States and Tribes



44 projects funded in FY 2002–2003. CRITFC tribes restored almost 4 miles of stream habitat in the Clearwater basin of the Columbia River through two PCSRF projects in 2001. In the Puget Sound basin of Washington, 38 PCSRF projects have restored about 22 stream miles of habitat.

Instream Projects

Under the category of "instream" projects, the specific activities described below have improved the quality of the instream environment for salmonids, including their ability to access quality habitat. Across the region, there were 49 fish screening projects, 470 fish passage improvement projects, 96 instream flow projects, and 561 instream habitat projects. Examples of PCSRF accomplishments include the following.

- At least 37 fish screens have been—and many more are proposed to be—installed or upgraded. These screens prevent salmon from passing into areas such as irrigation diversion channels, resulting in increased survival of juvenile fish.

INDICATORS FOR HABITAT PROJECTS:
Instream Projects

- Fish screens installed
- Flow rate of water diverted through fish screens
- Quantity of water protected by fish screens
- Fish passage blockages removed or improved
- Stream length made accessible to salmon by the improvement or removal of culverts
- Stream length made accessible by the removal of barriers other than culverts
- Water returned to the stream
- Water flow gauges installed
- Volume of water leased or purchased
- Length of streambank stabilized
- Length of instream habitat treated, excluding bank stabilization

California—Bull Creek Instream Restoration in the Eel River Basin

Bull Creek, in the South Fork of the Eel River Basin in northern California, was devoid of many of the habitats essential for anadromous salmonids. The stream was a wide, low gradient reach dominated by large cobble and shallow riffles that provided no habitat for rearing summer juveniles or spawning adults.

From 2000 to 2002, PCSRF funds were used to implement habitat improvement projects, including the construction of large boulder/log structures to narrow and deepen the channel and create pools, and willow plantings to stabilize sections of bank and store fine sediments to promote riparian revegetation. Habitat was also improved by adding logs and root masses to the pools, and logs and boulders as deflectors to create areas of scour, eddy pools, and run habitats. Floodplain terraces were planted with 8,500 redwood and Douglas fir seedlings to eventually provide shade and maintain cooler water temperatures during summer months.

The improved portion now has a narrower and deeper channel with a much higher level of habitat diversity and is utilized by all salmonid life stages at various times of the year. A recent spawning survey over a 3.7 mile reach found that 54 percent of the chinook salmon nests or "redds" were found within the project reach, which was only 27 percent of the survey. Surveys found far more juvenile steelhead within the project reach than above or below it.

Prior to construction, summer 2000

After construction, summer 2003

- Under the fish passage performance indicators, 473 culverts and other fish passage barriers across the region have been removed or upgraded to improve fish passage. In addition, most of the state and tribal entities receiving PCSRF funds have proposed to remove or upgrade even more culverts through their existing fish passage programs.
- Fish passage improvements have opened up miles of previously inaccessible stream habitat for salmon. There were 26 projects completed in California, for example, that opened over 19 miles of stream habitat to salmon. Pacific coastal tribes have opened up over 16 stream miles of habitat through eight projects.
- In the middle Columbia River and Deschutes River watersheds, two instream flow projects have returned an additional four cubic feet per second of water to provide needed habitat conditions for salmon. Instream flow projects include releases from dams or impoundments and water conservation projects that reduce stream diversions or extractions.
- PCSRF funds have supported the restoration and protection of miles of instream habitat across the region, through activities such as placement of woody debris in streams, bank stabilization and slope adjustment, channel reconfiguration, rock control (weirs), insertion of deflectors or barbs, creation of pools, and other treatments. The State of Washington, for example, has funded 158 instream habitat projects that have treated about 9 stream miles through 2003, and will treat as many as 385 total stream miles when complete.

In future fiscal years, as more reporting metrics are accumulated and projects are completed, a better assessment of the effectiveness of these activities on salmon recovery will be possible.

Water Quality Projects

Water quality is a crucial aspect of salmonid habitat. States and tribes used PCSRF funds to fund 256 water quality projects. These projects improve water quality through a variety of means, such as water treatment, installation of sediment traps to capture

INDICATORS FOR HABITAT PROJECTS:
Water Quality

- Temperature
- Turbidity
- Bacteria
- Dissolved oxygen
- Pesticides
- pH
- Heavy metals
- Nutrients

Pacific Coastal Tribes—Stillaguamish Tribe Research on Threats Posed by Abandoned Fishing Gear

Sometimes called "ghost nets," the abandoned fishing gear in Northwest waters lives up to the nickname; derelict gill nets and crab pots are both hard to see and dangerous for scuba divers, boaters, and fishermen. The area's fish, including threatened chinook salmon are, however, the most threatened by these discarded relics. Modern monofilament gill nets do not decompose and can continue to trap fish, birds, and other wildlife for years.

The Stillaguamish Tribe is working to remove those threats. A recent effort by the tribe will identify and remove derelict nets and other gear in the Port Susan area. The project, which is funded with PCSRF dollars, looks to remove the more dangerous gill nets first. The project uses advanced technology to catalog where the gear exists: high-resolution "side scan" sonar produces detailed images of the underwater environment, showing precisely where the ghost nets rest. The data gathered through this effort will improve fisheries management efforts by giving the Tribe a clearer picture of the types of habitat in Port Susan and information on species killed by the nets.

highway runoff, and reductions in the use of herbicides, pesticides, and fertilizers. NMFS and the states and tribes receiving PCSRF funds have agreed upon a set of water quality indicators, so water quality treatment objectives can be tracked at the basin level. Projects funded by the State of Oregon, KRITFWC, and the Colville, Coquille, and Shoshone-Bannock Tribes, for example, have addressed the following indicators: dissolved oxygen, temperature, turbidity, bacteria, nutrients, and pH. Other possible indicators include heavy metals and pesticides.

Riparian, Upland, Wetland, and Estuarine Habitat Restoration Projects

PCSRF has provided funding support for a considerable array of habitat restoration projects beyond instream areas in the Pacific coastal region—524 projects restored riparian habitat, 420 projects restored upland habitat, 50 projects protected or restored wetland areas, and 34 projects protected or restored estuarine areas. Further descriptions of these projects and examples of accomplishments follow.

INDICATORS FOR HABITAT PROJECTS:
Riparian, Upland, Wetland, and Estuarine Habitat Restoration Projects

- Length of riparian stream bank treated
- Amount of riparian area treated for invasive plant species
- Amount of riparian area treated, excluding invasive species treatment
- Amount of upland habitat area treated
- Length of road treated
- Amount of wetland/estuarine area treated
- Amount of artificial wetland/estuarine area created
- Amount of wetland/estuarine area treated for invasive species

- Riparian habitat projects affect areas above the normal high water mark of the stream but within the flood plain to improve environmental conditions for salmon throughout their life cycle. Activities in riparian areas include improvements in irrigation practices, planting, weed control, fencing, conservation grazing management, livestock exclusion, and livestock water development. Oregon, for example, treated about 49 miles of riparian streambank habitat in the northern coast of Oregon.
- Upland projects are landscape-level projects above the flood plain that indirectly affect salmonid habitat by, for example, changing the quality and quantity of water. Upland habitat projects include activities such as improvements to road stream crossings and drainage systems, road removal, and upland erosion control through planting, sediment control basins, conservation land management, and other activities. California, for example, had 51 projects that treated about 54 miles of road to improve salmon habitat. In the coastal area of Washington, the Chehalis Tribe treated 13.6 acres of upland habitat in two PCSRF projects.
- Wetland habitat projects aim to protect, create, or improve connected wetland areas to support salmon production. Salmon populations, especially juveniles, can benefit from access to connected wetland areas that provide food, protection from high flows, and protection from predators. PCSRF also supported the creation of new wetlands to provide salmon habitat, as well as the planting of wetland vegetation and other enhancements to existing wetlands known to support salmon.
- Estuarine habitat projects are designed to improve or increase the availability of estuarine habitat for salmon. Projects include tidal channel restoration, improved floodplain connectivity, tide gate fish passage improvements, and dike breaching or removal. Estuaries are important for salmon out migration as juvenile salmonids begin the transition from fresh to salt water environments. In Puget Sound, for example, a PCSRF project treated 1.3 acres of estuarine habitat in 2001.

As with the performance indicators for other types of projects, NMFS and the states and tribes receiving PCSRF funds are increasing their capacity for monitoring and reporting on the results of investments in habitat restoration in these areas. The aim is to provide aggregate, regional data on the stream miles and acres of different types of habitat treated to improve salmonid habitat.

Land Acquisition, Easement, and Lease Projects

States and tribes also use PCSRF funds to protect and further improve habitat conditions for salmon by acquiring or leasing riparian and adjacent areas. There were 165 land acquisition, easement, and lease projects across the region. Performance indicators for this type of project include the amount of land, estuarine, or wetland area protected and the length of stream bank protected. CRITFC tribes, for example, acquired 176 acres of land in the middle Columbia River basin to protect spawning and rearing habitat for salmon. Moreover, a PCSRF project in the central California coastal area protected 0.75 miles of stream bank (on both sides of the stream) through a land acquisition.

INDICATORS FOR HABITAT PROJECTS:
Land Acquisition, Easement, and Lease Projects

- Amount of land, wetland, or estuarine area protected by land acquisition, easement, or lease
- Length of stream bank protected through land acquisition, easement, or lease

Washington—Nisqually Estuary Restoration

The Nisqually Indian Tribe seeks to double the production of chinook salmon in the Nisqually River delta (Pierce and Thurston Counties) by restoring nearly 150 acres of salt marsh. The delta is seen as a rare chance to restore an estuary in Puget Sound, where 70 to 80 percent of the estuarine environment has already been lost. Estuary restoration will make a significant contribution to chinook salmon recovery, as well as chum, coho, and cutthroat.

The project began with the Tribe's acquisition of a 400-acre farm just west of Interstate 5 from a willing seller, whose family had farmed the land for several generations. The land had been diked and drained to provide pasture. With PCSRF and state funds from the Washington Salmon Recovery Funding Board (85 percent of total project cost), the Tribe removed the dikes adjacent to Red Slough in the summer of 2002, and restored 31 acres of tideland, which will revert to salt marsh, providing cover and nutrients for juvenile salmon as they make the transition to saltwater.

Before

After

Watershed and Sub-basin Planning and Assessments

Watershed planning and assessment projects are key to ensuring that recovery funds are spent wisely and appropriately on the factors most affecting the decline and recovery of salmon. Planning projects identify and prioritize future actions, as well as build partnerships through cooperative and collaborative planning groups. Planning efforts are underway in every state receiving PCSRF funds. PCSRF has supported 958 watershed and sub-basin planning and assessment projects, and about 42 percent of these projects are complete.

Projects can include recovery planning and participation in NMFS TRTs, watershed assessments and mapping, sub-basin planning, development of habitat inventory reports, and organizational infrastructure and staffing support for watershed councils, local conservation groups, and tribal entities. A major goal of planning and assessments is to identify key factors that limit salmon recovery to provide knowledge about where investments should be made. These projects often also address measures needed to eliminate limiting factors. Exhibit 3–5 depicts the number of watershed and planning projects and those completed by states and tribes.

INDICATORS FOR WATERSHED AND SUB-BASIN PLANNING AND ASSESSMENT PROJECTS:

- Projects that support local watershed councils
- Projects that support tribal or other agency infrastructure for assessments and recovery planning
- Plans and assessments that incorporate the biological goals consistent with Technical Recovery Team recommendations or state or tribal conservation plans
- Plans and assessments that identify actions necessary to meet the goals
- Plans and assessments that have been used by a local watershed group to guide restoration activity
- Stream miles containing anadromous Pacific salmon that have been surveyed and assessed
- Stream miles surveyed in areas with disturbed riparian vegetation

Watershed Planning and Assessment

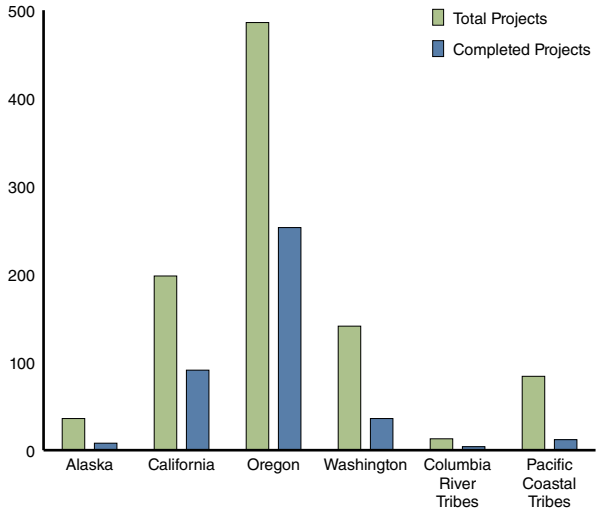
California—Eel River Cooperative Sediment Reduction and Water Quality Improvement Program

PCSRF and the State of California are supporting the Humboldt County Resource Conservation District (HCRCD) in creating a network of locally led groups and organizations to conduct conservation activities. This network works with private landowners to improve water quality, reduce soil erosion, and improve fisheries habitat in the South Fork Eel and Van Duzen Rivers in northern California. HCRCD developed the Eel River Cooperative Sediment Reduction and Water Quality Improvement Program to guide this effort. Program goals include: increasing communication with and involvement of local landowners and stakeholders, reducing erosion and sediment delivery to stream systems, improving and enhancing riparian habitat, and improving instream habitat conditions and water temperatures for anadromous fish.

HCRCD has developed key partnerships with many different landowners, watershed groups, and agency representatives. These partnerships have resulted in identifying, prioritizing, and implementing erosion prevention and riparian corridor enhancement projects including on-site assessment and project design; educational/training workshops; and other logistics and technical assistance activities to landowners and landowner based groups. Examples of projects include road upgrading and decommissioning, gully stabilization, and riparian habitat improvements such as fencing, revegetation, and bank stabilization. For more information see: http://www.carcd.org/wisp/humboldt/factsheet.pdf.

Across the region, 93 different watershed and sub-basin plans are under development. Twenty-one of these 93 plans are now complete. Limiting factor assessments have been completed in many of the plans, thus helping to determine what actions are needed to recover ESA listed salmon. As described in Chapter 2, limiting factors include a wide variety of physical and biotic components, such as loss of access to suitable spawning and rearing habitat, alteration or deterioration of habitat, introduction of exotic species, water quality degradation, water quantity changes, overharvest, and negative effects of hatchery practices.

Exhibit 3–5: Watershed and Sub-basin Planning and Assessment Projects by States and Tribes



Planning for salmon recovery occurs at multiple geographic scales. These efforts often involve many participants and range from plans and habitat inventory reports for individual watersheds or sub-basins to regional recovery plans and Tribal Resource Management Plans. Many of the PCSRF planning investments include components to ensure opportunities for landowners and other interested parties to engage in salmon recovery efforts.

In future fiscal years, NMFS, states, and tribal entities will measure and report accomplishments from watershed and sub-basin planning and assessment projects using the more refined performance indicators listed on the previous page. Not only will grantees report on plans and assessments that are in development or complete, but also on the content of those plans and assessments and other uses of planning and assessment funding.

Salmon Enhancement

Total PCSRF funds spent on enhancement projects was about $43 million. Enhancement projects in Alaska accounted for 70 percent (or nearly $30 million) of this total.

Salmon enhancement projects address depressed stocks of wild anadromous salmonids through hatchery supplementation, reduction in fishing efforts on depressed wild stocks, and enhancement of Pacific salmon fisheries on healthy stocks in Alaska. In some watersheds, hatchery supplementation may be an important feature of recovery plans, particularly as tribal treaty fishing rights must be balanced with harvest restrictions and other recovery actions. Current hatchery reform efforts underway are designed to reduce conflicts between hatchery and wild stocks. Additionally, salmon harvest plans are developed and carried out to ensure weak stocks are afforded maximum protection from unintended harvest through various restrictions (i.e., time, place, effort, gear). In Alaska, PCSRF funds are specifically used to help offset harvest restrictions set through the 1999 Pacific Salmon Treaty Agreement, which is a salmon management agreement between the United States and Canada.

A total of 111 salmon enhancement projects was funded through PCSRF, nearly all of which reported on specific performance indicators. Exhibit 3–6 depicts the number of these projects and those completed. Overall, 36 percent is complete. The primary focus of these projects has been rebuilding weak stocks (64 percent), which focus on reduced harvest and minimizing adverse impacts on depressed wild stocks; and supplementation (23 percent), which involves the capture of wild stock that are spawned in captivity with resulting progeny raised in hatcheries and released as juveniles. Salmon enhancement projects vary from improvements and modifications to hatchery sites (i.e., rearing/acclimation ponds) to fish marking programs that will ensure harvesting of hatchery stocks only.

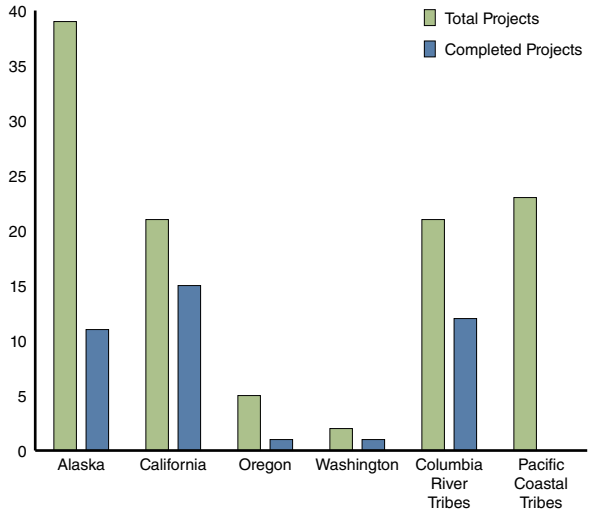
Fish marking programs allow easy identification of hatchery fish on fishing grounds for selective harvests that avoid taking of wild stocks. Reported projects indicate more than 25 million fish were marked using PCSRF funds, primarily in Alaska and the Columbia River. In addition, 128 million fry and smolt were produced in hatcheries through improvements made to production facilities with PCSRF funds. Increased fry survival and number of outmigrating smolts are part of supplementation efforts.

In future reports, as more data are reported, additional information will be available about PCSRF projects that assist the Alaska salmon industries and dependent communities, including improvements in infrastructure, product quality, and marketing programs.

INDICATORS FOR SALMON ENHANCEMENT PROJECTS:

- Habitat restoration project (if any) complemented
- Hatchery fry/smolt released that re-direct harvests, supplement weak or depressed stocks, or compensate for reduced harvest levels set by the Pacific Salmon Treaty
- Hatchery fry/smolt released from wild fish
- Fish marking projects
- Fry/smolt produced through technology improvements
- Projects that evaluate sites or strategies for enhancement efforts
- Projects that involve marketing salmon (in Alaska only), including:
  - Number of permit holders/gear groups/communities/ processors assisted
  - Number of consumers reached by marketing efforts
- Number of permit holders, gear groups, communities, or seafood processors benefitting from infrastructure improvements
- Projects that improve the quality of salmon products, including percent of salmon chilled at capture, pounds of fish filleted, percentage of pink salmon diverted from canning, and new product development

Exhibit 3–6: Salmon Enhancement Projects by States and Tribes



Salmon Research, Monitoring, and Evaluation (RM&E)

Salmon recovery and conservation decisions must be based on solid science, monitored to verify results, evaluated to measure progress, and adjusted as necessary. RM&E projects provide information needed to assess—with some measure of scientific certainty—whether recovery actions are appropriate and effective. Information on the health and status of watersheds and salmon stocks, migration pathways, habitat preferences, harvest rates, impacts of hatchery fish, and other management questions is essential to the overall recovery strategy. NMFS has requested that all monitoring be coordinated as part of a regional effort to ensure salmon recovery goals and objectives are met. One of the performance indicators established under this objective is that a minimum of 10 percent of PCSRF funds distributed to each state or tribal commission will be expended toward monitoring and evaluation.

INDICATORS FOR SALMON RESEARCH, MONITORING, AND EVALUATION PROJECTS:

- Projects related to key salmon management questions
- Projects that are part of a comprehensive monitoring strategy
- Number and names of cooperating organizations
- Number of reports prepared that assess progress, report results of monitoring, or report research results
- Information on research related to the Pacific Salmon Treaty
- Description of findings from RM&E projects
- Number of miles of stream length assessed or monitored

Coho smolts released in a Clearwater River tributary

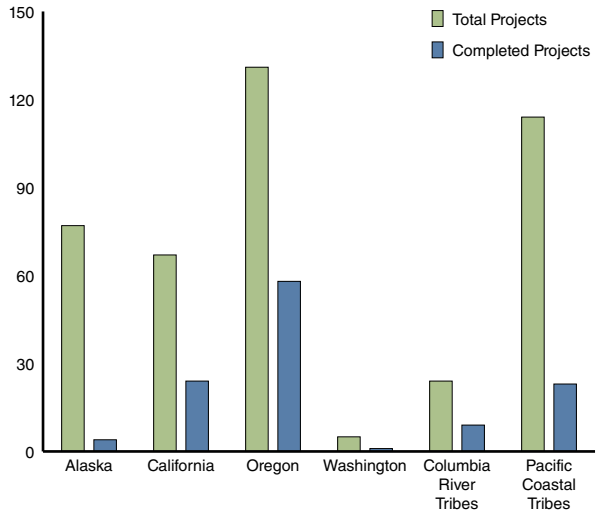
Salmon Enhancement

Columbia River Tribes—Coho Salmon Production in the Clearwater River, Columbia River Basin

With the support of the Columbia River Inter-Tribal Fish Commission, the Nez Perce Tribe is implementing a multi-year project to establish a natural population of coho salmon in selected streams in the Clearwater River basin. The re-establishment of coho salmon in the Clearwater River basin began in 1995 with the release of 630,000 coho salmon parr into five streams, and restoration efforts continued with the release of eggs, parr, and smolts from 1996-2002. With the support of PCSRF, over one million coho salmon were released annually in 2000-2002 through this project. The primary goal of the project is to reintroduce and restore coho salmon to levels of abundance and productivity sufficient to support sustainable runs and annual harvest. The project also involves monitoring and evaluating the results of the reintroduction program so operations can be adaptively managed to optimize hatchery and natural production and minimize deleterious ecological impacts.

A total of 418 RM&E projects has been funded through PCSRF. Exhibit 3–7 displays the numbers of RM&E completed projects by entity; 28 percent has been completed. These RM&E projects are designed to address key management questions regarding the recovery and/or sustainability of healthy salmon stocks. Key management questions include the biological impacts of management actions, such as the effectiveness of harvest restrictions, results of hatchery reform efforts, and success of habitat-related actions.

Exhibit 3–7: Research, Monitoring, and Evaluation Projects by States and Tribes



In addition to RM&E projects related to key management questions, grantees reported 112 cooperative projects designed to provide regional coordination across the various federal, state, and tribal data collection efforts. An average of about seven entities per project cooperate on RM&E projects, based on performance indicators reported to date.

Research, Monitoring, and Evaluation

Alaska—Genetic Stock Identification in the SE Alaska Troll Fishery

PCSRF and the Chinook Technical Committee of the Pacific Salmon Commission are funding the development of a genetic baseline for DNA markers in Southeast Alaska troll fisheries. The Alaska Department of Fish and Game is conducting the project to genetically identify stock from troll fisheries to enhance the ability of accurately estimating the true stock composition of groups of chinook salmon in the fishery. The fishery harvests mixed stocks of chinook salmon in winter, spring, and summer originating from Alaska, British Columbia, and the Pacific Northwest. A quota is specified by the Pacific Salmon Commission based on the projected abundance of chinook salmon stocks estimated using techniques such as catch, escapement, coded-wire tag recovery, and recruitment information. These estimates vary in accuracy because of data gaps on all stocks contributing to the fishery and changes in the fishery over time.

Sitka, Alaska is the central port for most of the chinook salmon troll fishery

Genetic stock identification provides an independent and more accurate and comprehensive source of information on stock abundance. Data on genetic stock structure of chinook throughout its range have been collected, standardized, and combined into a coastwide baseline managed by the NMFS Northwest Fisheries Science Center. The project has provided useful insights into the chinook fishery such as independent confirmation that the majority (> 60 percent) of the chinook salmon harvested in the spring fishery are from local stocks. In the spring of 2004, the project will be expanded to include gillnet, seine and sport fisheries.

One of the goals of the PCSRF program is that a representative number of habitat restoration projects include monitoring as part of a larger comprehensive program to evaluate the effectiveness of restoration efforts. PCSRF grantees identified 227 habitat projects that have a monitoring component; 62 percent of these (141 projects) are Oregon projects.

The remaining performance indicators for RM&E projects include scientific and technical reports prepared and the number of stream miles proposed for monitoring. There were 14 RM&E projects monitoring streams for habitat conditions, water quality, fish abundance/productivity, and watershed conditions. A total of 1,841 miles of stream will be monitored through these projects.

Public Outreach and Education

Conservation, restoration, and long-term sustainability of healthy Pacific salmon and steelhead populations, as well as the habitat upon which they depend, is the ultimate goal of the PCSRF. Educating the individuals who live and work in the Pacific coast states about needed planning and assessment

INDICATORS FOR OUTREACH AND EDUCATION PROJECTS:

- Focus of the project (e.g., sustainability, restoration, maintenance of watershed and fish population health)
- Number of workshops or training events held
- Number of individuals who participated in the workshop or training
- Number of documents produced
- Number of schools or institutions reached

Outreach and Education

Oregon—Crossing Boundaries Education Program

Students participating in the Crossing Boundaries Education Program

The "Crossing Boundaries Education Program" in Northwest Oregon is teaching 1,000 students at nine different K–12 schools about salmon in their regional watershed, the lower Columbia River and its estuary. Each participating school in communities from western Clatsop County and east to Corbett in Multnomah County develops its own study site for use by participants from all sites. Local students help teach visiting students about the elements unique to their sites. The program's main teaching tool is a technically sound water quality monitoring program, with data collected by students and made available to watershed councils and other interested parties. Students get hands-on opportunities to learn about salmon, water quality, wetlands, forestry, soils, and watersheds. Public school teachers receive support for training, student transportation, substitute teacher costs, supplies, and equipment. The Oregon Watershed Enhancement Board (OWEB) provided grants to both the Crossing Boundaries Consortium (in 1999) and, using PCSRF funds, to the Lower Columbia River Estuary Program (LCREP) in 2001. The Program is also supported by local agencies, watershed councils, and non-governmental organizations. For more information see: http://www.lcrep.org/boundaries.htm.

efforts, recovery actions, and the value of those recovery actions is an essential part of changing and improving current conditions.

There were 229 outreach and education projects funded under the PCSRF, with 48 percent of them completed (See Exhibit 3–8). At least 23 of the outreach and education projects included workshops or events sponsored with PCSRF funds. Over 1,100 participants attended these workshops and events.

As with other types of projects, more complete information on the results of outreach and education projects—including regional totals of outreach documents produced, and schools and people reached through education projects—will be available for future reports.

Exhibit 3–8: Public Outreach and Education Projects by States and Tribes